

IN THE SPECIFICATION

Please replace the paragraph beginning on page 4, line 5 with the following replacement paragraph, where additions are shown in double underline and deletions are shown in ~~strikeout~~.

“FIGURE 4 illustrates another embodiment of the sensing and control element 10 of the present ~~inventin~~ invention, in which rotation and torque of the tool 4 is sensed and controlled in addition to sensing translation and controlling axial force as described in Figure 3. In Figure 4, as the elongated portion of working channel tool 4 rotates between motion sensing and control wheel 28 and idler wheel 26, it causes rotation of each wheel. Wheel 28 is affixed to shaft 29 of actuator 30. In turn, transparent optical encoder disk 34 is affixed to the opposite end of motor shaft 29 of actuator 30. In turn, transparent optical encoder disk 34 is affixed to the opposite end of motor shaft 29. Encoder reader 38 passes light through transparent encoder disk 34. As transparent encoder disk rotates, marks imprinted on the surface pass in front of the light source, occluding alternately light passing through the disk. A plurality of light sensors in encoder reader 38 measure the varying light and dark patterns and determine the amount and direction of rotational motion of encoder disk 34. Control unit 24 receives motion signals from encoder reader 38 corresponding to rotational motion of working channel tool 4. Control unit 24 measures the rotation of working channel tool 4 using these signals.”